

WHAT IS CLAIMED IS:

1 1. A method comprising:
2 attempting in a first attempt to acquire a first resource for a task requiring both a
3 first resource and a second resource;
4 enqueueing said task on a first queue if said first attempt to acquire said first
5 resource for said task fails;
6 acquiring in a second attempt said first resource for said task;
7 removing said task from said first queue;
8 attempting in a first attempt to acquire said second resource for said task;
9 enqueueing said task on a second queue if said first attempt to acquire said second
10 resource for said task fails; and
11 releasing said first resource for said task if said first attempt to acquire said
12 second resource for said task fails.

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1 2. The method of claim 1 wherein said first task has a first priority, and
2 wherein said first attempt to acquire said first resource fails when a second task having
3 said first priority in enqueued on said first queue.

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1 3. The method of claim 2 wherein said first task has a first priority, said
2 method further comprising:
3 attempting in a first attempt to acquire said first resource for a third task requiring
4 said first resource and having a second priority higher than said first priority, and
5 enqueueing said third task on a third queue if said first attempt to acquire said first
6 resource for said third task fails; and
7 wherein said first attempt to acquire said first resource for said first task fails
8 when said third task having said second priority is in enqueued on said third queue.

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1 4. The method of claim 3 wherein said first task has a first priority, and wherein
2 said first attempt to acquire said second resource fails when a fourth task having said first
3 priority in enqueued on said second queue.

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1 5. The method of claim 4 wherein said first task has a first priority, said
2 method further comprising:
3 attempting in a first attempt to acquire said second resource for a fifth task
4 requiring said second resource and having a second priority higher than said first priority,
5 and

6 enqueueing said fifth task on a fourth queue if said first attempt to acquire said
7 second resource for said fifth task fails; and

8 wherein said first attempt to acquire said second resource for said first task fails
9 when said fifth task having said second priority is in enqueued on said fourth queue.

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1 6. The method of claim 5 further comprising:
2 acquiring in a third attempt said first resource for said first task;
3 attempting to acquire in a second attempt said second resource for said first task;
4 and
5 releasing said first resource for said first task if said second attempt to acquire
6 said second resource for said task fails.

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1 7. The method of claim 5 further comprising:
2 acquiring in a third attempt said first resource for said first task;
3 acquiring in a second attempt said second resource for said first task;
4 removing said first task from said second queue; and
5 dispatching said first task to be completed using said first and second resources.

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1 8. The method of claim 7 further comprising:

2 finding another task enqueued on one of said second and fourth queues for said
3 second resource;
4 acquiring said first resource for said other task;
5 attempting to acquire said second resource for said other task;
6 removing said other task from its queue if said attempt to acquire said second
7 resource for said other task succeeds;
8 dispatching said other task to be completed using said first and second resources
9 if said attempt to acquire said second resource for said other task succeeds; and
10 releasing said first resource for said other task if said attempt to acquire said
11 second resource for said other task fails.

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1 9. The method of claim 7 wherein said third attempt is initiated by the
2 second resource becoming free.

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1 10. The method of claim 7 wherein said third attempt is initiated by the first
2 resource becoming free.

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1 11. The method of claim 7 further comprising:
2 after all tasks have been removed from said second and fourth queues, finding a
3 next task enqueued on one of said first and third queues for said first resource;
4 acquiring said first resource for said next task ;
5 attempting to acquire said second resource for said next task;
6 removing said next task from its queue if said attempt to acquire said second
7 resource for said next task succeeds;
8 dispatching said next task to be completed using said first and second resources if
9 said attempt to acquire said second resource for said next task succeeds; and
10 releasing said first resource for said next task if said attempt to acquire said
11 second resource for said next task fails.

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1 12. An article of manufacture wherein the article of manufacture causes
2 operations, the operations comprising:
3 attempting in a first attempt to acquire a first resource for a task requiring both a
4 first resource and a second resource;
5 enqueueing said task on a first queue if said first attempt to acquire said first
6 resource for said task fails;
7 acquiring in a second attempt said first resource for said task;
8 removing said task from said first queue;
9 attempting in a first attempt to acquire said second resource for said task;
10 enqueueing said task on a second queue if said first attempt to acquire said second
11 resource for said task fails; and
12 releasing said first resource for said task if said first attempt to acquire said
13 second resource for said task fails.

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1 13. The article of claim 12 wherein said first task has a first priority, and
2 wherein said first attempt to acquire said first resource fails when a second task having
3 said first priority in enqueued on said first queue.

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1 14. The article of claim 13 wherein said first task has a first priority, said
2 operations further comprising:
3 attempting in a first attempt to acquire said first resource for a third task requiring
4 said first resource and having a second priority higher than said first priority, and
5 enqueueing said third task on a third queue if said first attempt to acquire said first
6 resource for said third task fails; and
7 wherein said first attempt to acquire said first resource for said first task fails
8 when said third task having said second priority is in enqueued on said third queue.

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1 15. The article of claim 14 wherein said first task has a first priority, and wherein
2 said first attempt to acquire said second resource fails when a fourth task having said first
3 priority in enqueued on said second queue.

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1 16. The article of claim 15 wherein said first task has a first priority, said
2 operations further comprising:

3 attempting in a first attempt to acquire said second resource for a fifth task
4 requiring said second resource and having a second priority higher than said first priority,
5 and

6 enqueueing said fifth task on a fourth queue if said first attempt to acquire said
7 second resource for said fifth task fails; and

8 wherein said first attempt to acquire said second resource for said first task fails
9 when said fifth task having said second priority is in enqueued on said fourth queue.

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1 17. The article of claim 16, said operations further comprising:

2 acquiring in a third attempt said first resource for said first task;

3 attempting to acquire in a second attempt said second resource for said first task;

4 and

5 releasing said first resource for said first task if said second attempt to acquire
6 said second resource for said task fails.

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1 18. The article of claim 16, said operations further comprising:

2 acquiring in a third attempt said first resource for said first task;

3 acquiring in a second attempt said second resource for said first task;

4 removing said first task from said second queue; and

5 dispatching said first task to be completed using said first and second resources.

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1 19. The article of claim 18, said operations further comprising:

2 finding another task enqueued on one of said second and fourth queues for said
3 second resource;
4 acquiring said first resource for said other task;
5 attempting to acquire said second resource for said other task;
6 removing said other task from its queue if said attempt to acquire said second
7 resource for said other task succeeds;
8 dispatching said other task to be completed using said first and second resources
9 if said attempt to acquire said second resource for said other task succeeds; and
10 releasing said first resource for said other task if said attempt to acquire said
11 second resource for said other task fails.

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1 20. The article of claim 18 wherein said third attempt is initiated by the
2 second resource becoming free.

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1 21. The article of claim 18 wherein said third attempt is initiated by the first
2 resource becoming free.

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1 22. The article of claim 18, said operations further comprising:
2 after all tasks have been removed from said second and fourth queues, finding a
3 next task enqueued on one of said first and third queues for said first resource;
4 acquiring said first resource for said next task ;
5 attempting to acquire said second resource for said next task;
6 removing said next task from its queue if said attempt to acquire said second
7 resource for said next task succeeds;
8 dispatching said next task to be completed using said first and second resources if
9 said attempt to acquire said second resource for said next task succeeds; and
10 releasing said first resource for said next task if said attempt to acquire said
11 second resource for said next task fails.

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1 23. A system comprising:
2 means for attempting in a first attempt to acquire a first resource for a task
3 requiring both a first resource and a second resource;
4 means for enqueueing said task on a first queue if said first attempt to acquire said
5 first resource for said task fails;
6 means for acquiring in a second attempt said first resource for said task;
7 means for removing said task from said first queue;
8 means for attempting in a first attempt to acquire said second resource for said
9 task;
10 means for enqueueing said task on a second queue if said first attempt to acquire
11 said second resource for said task fails; and
12 means for releasing said first resource for said task if said first attempt to acquire
13 said second resource for said task fails.

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1 24. The system of claim 23 wherein said first task has a first priority, and
2 wherein said first attempt to acquire said first resource fails when a second task having
3 said first priority in enqueued on said first queue.

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1 25. The system of claim 24 wherein said first task has a first priority, said
2 system further comprising:
3 means for attempting in a first attempt to acquire said first resource for a third
4 task requiring said first resource and having a second priority higher than said first
5 priority, and
6 means for enqueueing said third task on a third queue if said first attempt to
7 acquire said first resource for said third task fails; and
8 wherein said first attempt to acquire said first resource for said first task fails
9 when said third task having said second priority is in enqueued on said third queue.

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1 26. The system of claim 25 wherein said first task has a first priority, and
2 wherein said first attempt to acquire said second resource fails when a fourth task having
3 said first priority in enqueued on said second queue.

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1 27. The system of claim 26 wherein said first task has a first priority, said
2 system further comprising:

3 means for attempting in a first attempt to acquire said second resource for a fifth
4 task requiring said second resource and having a second priority higher than said first
5 priority, and

6 means for enqueueing said fifth task on a fourth queue if said first attempt to
7 acquire said second resource for said fifth task fails; and

8 wherein said first attempt to acquire said second resource for said first task fails
9 when said fifth task having said second priority is in enqueued on said fourth queue.

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1 28. The system of claim 27 further comprising:

2 means for acquiring in a third attempt said first resource for said first task;

3 means for attempting to acquire in a second attempt said second resource for said
4 first task; and

5 means for releasing said first resource for said first task if said second attempt to
6 acquire said second resource for said task fails.

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1 29. The system of claim 27 further comprising:

2 means for acquiring in a third attempt said first resource for said first task;

3 means for acquiring in a second attempt said second resource for said first task;

4 means for removing said first task from said second queue; and

5 means for dispatching said first task to be completed using said first and second
6 resources.

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1 30. The system of claim 29 further comprising:
2 means for finding another task enqueued on one of said second and fourth queues
3 for said second resource;
4 means for acquiring said first resource for said other task;
5 means for attempting to acquire said second resource for said other task;
6 means for removing said other task from its queue if said attempt to acquire said
7 second resource for said other task succeeds;
8 means for dispatching said other task to be completed using said first and second
9 resources if said attempt to acquire said second resource for said other task succeeds; and
10 means for releasing said first resource for said other task if said attempt to acquire
11 said second resource for said other task fails.